



Abhay Pratap Singh
UG (IV Year I Semester)
B.Tech. (Civil Engineering)
Contact No: 7068313499
Email: abhay_ps@ce.iitr.ac.in
Registration No: 20113004/2024



Area of Interest

Problem Solving, Algorithm Development, Project Management

Education

| Year | Degree/Examination | Institution/Board | CGPA/Percentage |
|------|--------------------------|---|-----------------|
| 2023 | B.Tech. 3rd Year | Indian Institute of Technology, Roorkee | 6.542 |
| 2020 | Intermediate (Class XII) | Dr. Virendra Swaroop Education Centre Panki, Kanpur | 89.60 % |
| 2018 | Matriculate (Class X) | Dr. Virendra Swaroop Education Centre Panki, Kanpur | 93.80 % |

Internships

Summer Internship | Rodic Consultants Pvt. Ltd.

May 2022 - July 2022

- Worked on three.js to render 3D model on web.
- Studied 3D model properties to insert data in mesh as per companies use-case.
- Created multi-functionality website as illustration demo for ongoing real-time project.
- Used GMaps Codelabs on WebGL to render 3D model on G Maps.

Projects

Empirical evaluation of Strain Values for Pavement Design | Civil Engineering Department, IIT Roorkee

August 2023 - Present

- Integrated field data and IITPAVE software for precise strain value assessment in pavement design
- Created and fine-tuned prediction models for strain forecasting using linear regression and SVM with various kernels
- Developed a model with an R-squared score of 0.88 and formulated an empirical equation for strain prediction

Granular Material Analysis using Image Processing Techniques | Civil Engineering Department, IIT Roorkee

August 2023 - Present

- Created a pixel-based model for particle categorization using thresholding techniques to distinguish particles
- Classified particle images into eroded and dilated types and extracted relevant parameters for thorough analysis
- Applied the model to real-time aggregates, extracting data in Excel for subsequent analytics and decision-making

Telecom Churn Prediction | Dept. of Management Studies, IIT Roorkee

March 2023 - May 2023

- Extracted meaningful insights such as customer lifetime value, churn history, and customer segmentation.
- Normalization, and feature scaling are applied to ensure data quality.
- EDA is conducted to gain a deep understanding of the data, outliers, and visualize customer behaviors.
- Various machine learning and statistical models are explored and hyperparameter tuning and cross-validation are performed to optimize model performance.

Restaurant of the Future (RoTF) | Models and Robotics Section, IITR

August 2021 - February 2022

- RoTF is an idea of restaurant with automated order booking and robot as waiter.
- Order is booked with help of Dialog Flow and transmitted through IoT using MQTT broker.
- Order data is saved in MySQL and manipulated through Flask along with frontend at Chefs end.
- Scheduling algorithm is used to facilitate serving of order in minimum time, giving data to RoTF Bot.

Skills

Computer languages Python, JavaScript, C++
Software Packages MYSQL
Additional Courses MAN-006:-Probability and Statistics.
Languages Known English (SRW) , Hindi (SRW)

Positions of Responsibility & Extra Curriculars

Participant (Received 4th Rank) | Symposium, Aakaar IIT Bombay (City Planning Competition) January 2022 - March 2022

- Selected city based on the Smart City Projects and SWOT analysis.
- Researched about the current Smart City plans and possible solutions through govt. schemes.
- Provided Budget for each Plan, and made systematic approach for development.
- Addressed real-time problem of Floods and Slum and provided apt solution for the same.

Technical Head | Civil Engineerin Consortium

August 2022 - May 2023

- Lead a team of 4 members in Switch Energy Alliance where 13 countries participated with 200+ teams and stood Semi-Finalist.
- Lead a team in Inter IIT Civil Conclave 22 on Case Study of Revamping Indian Forests and bagged third position.
- Lead a group of 22 people in AAKAAR'22 Competition in different domains of Civil Engineering with 6 teams.

Participant | Switch Energy Alliance

September 2022 - November 2022

- Reached Finals among 200+ teams from 13+ countries Switch Energy Alliance Competition for 30 year development plan.